

**THE IMPACT OF FIRST LANGUAGE INTERFERENCE ON
ENGLISH PRONUNCIATION ACCURACY AMONG
ACEHNESE EFL LEARNERS**

THESIS

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ENGLISH PRONUNCIATION ACCURACY AMONG
ACEHNESE EFL LEARNERS**

THESIS

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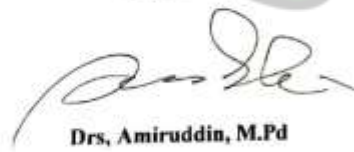
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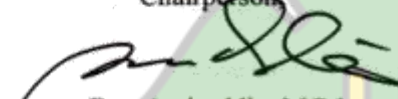
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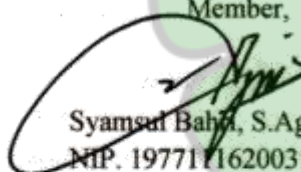
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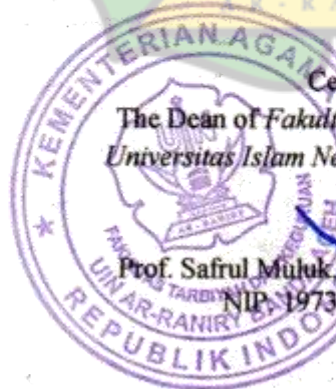
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Hereby declare that in writing this thesis, I:

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This statement is made truthfully and without coercion from any party.

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ABSTRACT

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Accurate pronunciation plays a vital role in oral communication and mutual intelligibility; however, English as a Foreign Language (EFL) learners frequently encounter severe pronunciation barriers due to first language (L1) negative transfer. English possesses nine fricative phonemes (/f, v, θ, ð, s, z, ʃ, ʒ, h/), which are produced by forcing air through a narrow passage in the vocal tract to create continuous friction. This study investigates the impact of Acehnese L1 phonological interference on the pronunciation accuracy of English dental fricatives (/θ/ and /ð/) among Acehnese EFL learners. Utilizing a descriptive qualitative research approach, data were collected from eight native Acehnese speakers residing in Gampong Iboih, Sabang, who regularly engage in tourism-driven oral English interaction. Participants completed oral reading tasks consisting of a 24-word isolated list and 10 contextual sentences containing target phonemes in initial, medial, and final positions. The acoustic recordings were transcribed using narrow phonetic notation according to the International Phonetic Alphabet (IPA) to measure accuracy quantitatively. The results show a widespread pattern of phonological substitution caused by structural gaps in L1. While the voiced dental fricative /ð/ was nearly always replaced by the voiced alveolar stop [d], the voiceless dental fricative /θ/, which necessitates placing the tongue tip slightly between the upper and lower teeth and expelling airflow, was systematically replaced with the voiceless alveolar stop [t] or aspirated stop [th]. Quantitatively, the total pronunciation accuracy decreased further in connected sentence tasks (3.8%) and remained notably low across the word list (7.3%), indicating that increased cognitive load increases reliance on native articulatory habits. The primary causes of these systematic errors stem from the complete absence of interdental fricatives in the Acehnese phonetic inventory, a lack of interdental muscle memory, and the cognitive mismapping of English fricatives onto native plosive categories.

TABLE OF CONTENT

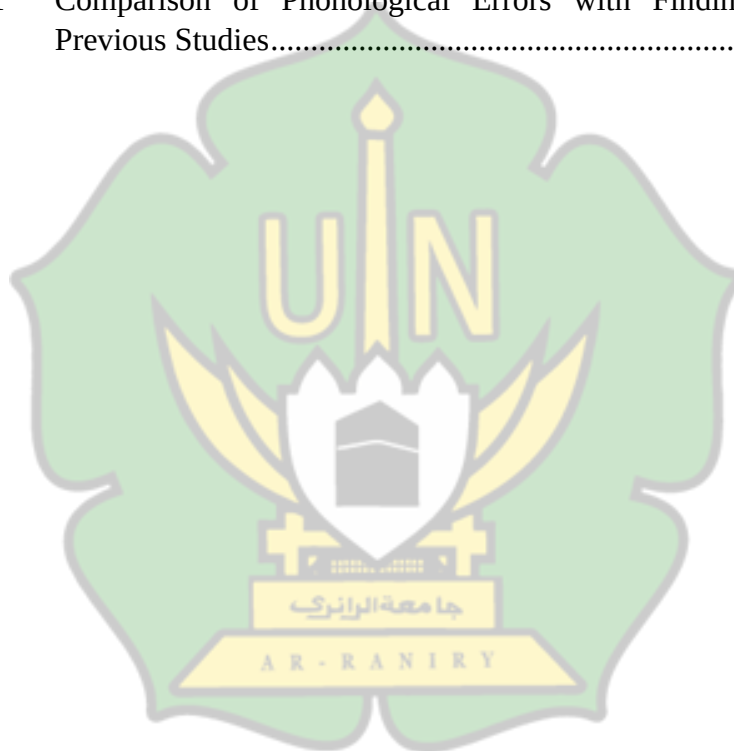
DECLARATION OF ORIGINALITY	i
ACKNOWLEDGEMENT	iv
ABSTRACT	vi
TABLE OF CONTENTS.....	vii
LIST OF TABLE	ix
LIST OF FIGURES	x
LIST OF APPENDICES	xi
CHAPTER I INTRODUCTION	xi
A. Background of Study	1
B. Research Question	8
C. The Aims of the Study	8
D. Significance of Study.....	8
E. Terminologies	9
CHAPTER II LITERATURE REVIEW	11
A. Phonetics and Phonology.....	11
B. The Organs of Speech.....	15
C. Phonological System of the Acehese Language	22
D. Technical Phonetic Variations and Interference Patterns.....	26
E. Example of Phonological Substitution on Dental Fricatives ..	27
F. Previous Studies	33
CHAPTER III RESEARCH METHODOLOGY	36
A. Research Design	36
B. Research Instrument.....	37
C. Data Collection Technique	37
D. Data Analysis Procedures	41
CHAPTER IV FINDINGS AND DISCUSSION	42
A. Findings	42
B. Discussion	56

CHAPTER V CONCLUSION AND RECOMMENDATION	57
A. Conclusion	57
B. Recommendations.....	59
REFERENCES.....	61



LIST OF TABLES

Table 2.1	Phonological Contrast Matrix between English and Acehnese	14
Table 2.2	Comparison of English and Acehnese Consonant Inventories	24
Table 2.3	Distribution of Voiceless and Voiced Dental Fricatives in English words	27
Table 2.4	Example of Phonological Substitution on Dental Fricatives	28
Table 4.1	Comparison of Phonological Errors with Findings from Previous Studies.....	55



LIST OF FIGURES

Figure 2.1	Sagittal Section of the Nose, Mouth, Pharynx, and Larynx	15
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LIST OF APPENDICES

Appendix 1	Research Instrument
Appendix 2	Participants' Demographic Profile
Appendix 3	Decree Letter
Appendix 4	Research Permit Letter
Appendix 5	Documentation
Appendix 6	Autobiograph



CHAPTER I

INTRODUCTION

A. Background of Study

In foreign language acquisition, accurate pronunciation plays a vital role in oral communication because it directly determines how effectively a spoken message is decoded by the listener (Derwing & Munro, 2015). When learners struggle with speech sound execution in academic or professional settings, they often experience severe communication barriers and speaking anxiety, leading to a reduced willingness to communicate (McIntyre et al., 1998). Pronunciation accuracy is not merely the production of isolated speech segments; it requires continuous articulatory precision and cognitive phonological control (Brown, 2007). However, English as a Foreign Language (EFL) learners frequently encounter persistent pronunciation barriers due to deeply ingrained native sound system habits, a structural phenomenon known as first language (L1) interference or negative transfer (Lado, 1957; Weinreich, 1953).

Pronunciation is the process by which sounds are produced to communicate meaning. It entails focusing on particular language sounds (segmentals) as well as suprasegmental features including intonation, stress, timing, rhythm, and voice quality, alongside paralinguistic elements such as gestures and facial expressions. A thorough definition of pronunciation incorporates both segmental and suprasegmental traits. As all these traits interact during verbal communication,

pronunciation remains an essential element of spoken language. This practical and academic challenge creates a heavy communicative burden. Richards and Renandya (2002, as cited in Amiruddin, 2018) argue, it is exceptionally difficult for EFL learners, especially adults, to speak a target language fluently and appropriately because their deeply ingrained native sound system operates differently from the target language. When a learner's pronunciation is inaccurate, it does not only lead to minor misunderstandings but can completely disrupt the natural flow of conversation, leading to systematic breakdown in mutual intelligibility. Consequently, when learners repeatedly fail to make themselves understood by native speakers or peers during oral performance, they tend to experience intense frustration and perceive themselves as failures in communication (Amiruddin, 2018). This phenomenon underscores that speech habits are remarkably stubborn; as McCarthy (1978, as cited in Amiruddin, 2018) profoundly notes, a foreign speaker can live an entire lifetime in a target country without achieving a respectable standard, continuously betraying the speech habits of their mother tongue.

In English communication, pronunciation is essential for effective understanding, confidence, and social interaction. Proper pronunciation helps prevent misunderstandings and negative opinions since words with similar sounds but different meanings can be confusing when mispronounced. Additionally, kids who pronounce words correctly are more confident and utilize language more frequently, which improves their communication skills. Teachers are crucial in assisting children in learning proper pronunciation because it influences their

speech patterns and overall language ability. In general, accurate pronunciation is essential for social integration and efficient communication in English

Accurately articulating speech sounds, emphasis, rhythm, and intonation are all part of proper pronunciation, which is an essential component of language acquisition. It is regarded as a basic ability in learning a second language since it has a direct effect on how understandable and intelligible learners' speech is overall.

For Acehese EFL learners, achieving target pronunciation accuracy is uniquely challenging due to substantial structural disparities between the Acehese and English sound systems (Asyik, 1987; Pillai & Yusuf, 2012). While Acehese possesses a rich inventory of monophthongs and nasalized vowels, its consonant inventory completely lacks dental fricatives specifically the voiceless /θ/ (as in *think*) and the voiced /ð/ (as in *that*). Consequently, when native Acehese learners encounter these non-native interdental sounds, their articulatory mechanisms instinctively experience a motoric breakdown, leading to systematic phonetic substitution where target interdental fricatives are replaced with familiar native alveolar stops such as [t], [t^h], or [d] (Aziz et al., 2020).

In the context of Acehese EFL learners, achieving high pronunciation accuracy is uniquely challenging due to these deep-rooted phonetic habits of their first language (L1). When learners in Aceh speak English, they naturally carry over the speech muscular habits from their mother tongue, leading to a phenomenon known as language interference. This is in accordance with Wilkins's (1986, as cited in Amiruddin, 2018) argument that one of the primary sources of

errors and difficulties that occur in the use of a foreign language is caused by the interference of the mother tongue. This phonological interference becomes highly apparent when learners encounter English sounds that do not exist in the Acehnese linguistic system. Instead of articulating the unfamiliar target sounds correctly, learners instinctively search for the closest available equivalents in their native repertoire to substitute them, which ultimately leads to systematic pronunciation errors.

The first language functions as a perceptual 'phonological sieve' or filter (Trubetzkoy, 1939; Weinreich, 1953) through which non-native speech sounds are parsed. Without explicit pronunciation instruction and focused phonetic practice, Acehnese learners will continue to filter and produce target English sounds using established native articulatory templates.

For Acehnese EFL learners, the phonetic distance between the Acehnese language and English presents a unique set of obstacles. The Acehnese sound system is characterized by a rich inventory of monophthongs and nasalized vowels, yet it lacks several consonant sounds that are prevalent in English. Due to the presence of diphthongs in nearly every word class, Acehnese is a unique language. According to Mahmud (2014:18), there are fourteen different kinds of diphthongs in the Acehnese language: /ai/, /ie/, /ue/, /ui/, /ée/, /ei/, /eue/, /oe/, /ôi/, /'ai/, /'ie/, /'ue/, /eu/, and /'eue/.

The pronunciation of dental fricatives, especially the voiced dental fricative /ð/ (as in the word “this”) and the voiceless dental fricative /θ/ (as in the word “think”), is one of the most frequent errors made by Acehnese learners studying

English pronunciation. There are no interdental sounds in the Acehnese language's phonetic inventory that call for the tongue to be positioned between teeth. As a result, Acehnese language learners frequently engage in a process of phonetic substitution when they come across certain English phonemes, substituting them with the closest sounds from their native language repertoire, like the alveolar stops /t/ and /d/.

A clear example of this mismatch can be observed in the production of English dental fricatives, specifically the voiceless /θ/ (as in think) and the voiced /ð/ (as in that). The Acehnese language completely lacks interdental fricative sounds; instead, its phonetic system relies heavily on stops or plosives, such as /t/, /d/, and the aspirated voiceless stop /tʰ/. Because Acehnese speakers are physically accustomed to hitting the alveolar ridge behind their teeth rather than placing the tongue between the teeth, negative transfer occurs. Consequently, when trying to say English words, learners frequently substitute the fricatives with native stops. For instance, the English word "think" is commonly pronounced as "tink" [tɪŋk] or replaced by the aspirated sound found in native Acehnese words like thèe (to know). Similarly, the voiced fricative in "that" is routinely substituted with the voiced alveolar stop, sounding like "dat" [dæt].

Furthermore, because pronunciation serves as a social identity marker and affects how people are seen in their social groupings, it is strongly associated with learners' social identities. Pronunciation is one of the most neglected dimensions of English language teaching. Teaching pronunciation is very important to enable the learners outstretch the skills that are indispensable to convey in the target

language (Namaziandost, Rahimi Esfahani, & Hashemifardnia, 2018 in Abbas Pourhosein Gilakjani, Ehsan Namaziandost, & Meisam Ziafar 2020).

Pronunciation is also associated with learners' perceptions and beliefs, as their attitudes towards classroom oral error corrections and pronunciation instruction can significantly impact their pronunciation accuracy. Furthermore, it has been discovered that teaching pronunciation can improve students' overall accuracy in producing target phones, especially when it is done explicitly through phonetic instruction and repeated practice. Pronunciation is a multifaceted skill that encompasses various linguistic and social dimensions, making it a critical area of focus in language teaching and research. (Derwing & Munro, 2015) (Peerdadeh & Entezamara, 2016) (Pourhosein Gilakjani et al., 2020).

To build a solid academic foundation for this issue, conducting an error analysis is vital. As Subramaniam et al. (2009, as cited in Amiruddin, 2018) state, such an error analysis can help teachers identify specific language problems, which can subsequently be used as a guide for more effective teaching. While earlier studies by researchers like Aziz et al. (2020) and Pillai and Yusuf (2012) provided valuable insights into general phonological interference and the substantial phonetic divergence between Acehnese and English, they rarely provided a micro-level, focused qualitative analysis dedicated exclusively to dental fricative consonants.

To support the investigation into this issue and fulfill the theoretical foundations, several previous studies have been conducted on first language interference and pronunciation. First, a study conducted by Aziz et al. (2020)

investigated the phonological interference of the Acehese language on EFL learners' English pronunciation. Their findings revealed that Acehese students frequently substituted English dental fricative sounds with closer native Acehese stops due to the absence of these specific fricative sounds in their native phonological system. Second, another relevant study by Pillai and Yusuf (2012) explored the production of English vowels and consonants by Acehese speakers.

This research highlighted that L1 interference plays a significant role in causing pronunciation inaccuracies among Acehese EFL learners because the phonetic inventory of the Acehese language differs substantially from English.

While these earlier studies have looked at broad phonological interference in Aceh, there are still few micro-level studies that offer in-depth qualitative analysis that are especially focused on these dental fricatives. Most earlier researchers did not concentrate specifically on either of these fricative consonants. Therefore, this current study aims to fill this gap by focusing specifically on dental fricative consonants rather than the entire range of English sounds, and explores in greater depth why most learners in Aceh frequently struggle with their English pronunciation accuracy.

Conclusively, based on the background explanation above, the researcher is highly motivated to conduct an in-depth phonological investigation under the title: "The Impact of First Language Interference on English Pronunciation Accuracy Among Acehese EFL Learners."

B. Research Question

Based on the background of the study, the researcher formulates the research questions as follows:

1. What types of phonetic substitutions are commonly made by Acehnese EFL learners when pronouncing the English /θ/ and /ð/ phonemes?
2. Why do Acehnese EFL learners encounter difficulties in producing English dental fricatives, viewed from their native phonological system and articulatory mechanisms?

C. The Aims of the Study

In accordance with the research questions above, the objectives of this study are:

1. To identify and classify the specific phonetic substitutions used by learners as a replacement for interdental sounds.
2. To explain the underlying linguistic and articulatory reasons for these pronunciation errors by comparing the Acehnese and English phonological systems.

D. Significance of Study

The significance of this research lies in both its theoretical and practical contributions to the field of English education. Theoretically, this study extends the existing literature on language interference by providing a precise, micro level analysis of dental fricative errors specifically within the Acehnese phonetic context. Practically, the insights gained from this study can serve as a valuable diagnostic tool for English teachers and local instructors to design more targeted

pronunciation drills. Furthermore, understanding these specific pronunciation barriers is highly significant for learners in local communities, particularly in tourism-driven regions of Aceh such as Gampong Iboih, Sabang. As a major international tourist destination, clear oral English performance among local community members in Gampong Iboih is essential for engaging with foreign visitors and driving professional growth. By focusing on native Acehnese speakers residing in this strategic area, the findings directly contribute to improving local communicative competence.

E. Terminologies

To avoid misinterpretation and to provide a clear understanding of the concepts used in this study, the following key terms are defined operationally:

1. First Language (L1) Interference

L1 interference also known as negative transfer refers to the influence of a learner's native language habits on the target language, resulting in linguistic errors when the two language systems differ (Ellis, 1985; Weinreich, 1953). In the context of this study, L1 interference specifically denotes the phonetic and phonological transfer from Acehnese (the participants' native language) onto English pronunciation, particularly in the production of non-native consonant sounds.

2. Pronunciation Accuracy

Pronunciation accuracy refers to the degree to which an EFL learner's speech production conforms to the standard phonetic and phonological rules of the target language, ensuring clear intelligibility (Subramaniam et al., 2009). In this study,

accuracy is operationally measured by evaluating participants' oral production of English target phonemes using narrow phonetic transcription based on the International Phonetic Alphabet (IPA).

3. Acehnese EFL Learners

Generally, English as a Foreign Language (EFL) learners refer to individuals learning English in an environment where it is not the primary language of daily communication (Brown, 2007). In the specific context of this study, Acehnese EFL Learners are operationally defined as adult native Acehnese speakers residing in Gampong Iboih, Sabang, who use Acehnese as their first language (L1) and actively engage in informal English oral communication with foreign international tourists in their local community.

4. English Dental Fricatives

Dental fricatives are consonant sounds produced by placing the tip or blade of the tongue against the upper teeth, creating friction as air escapes through the narrow opening (Avery & Ehrlich, 1992; Ladefoged & Johnson, 2011). In English phonology, these consist of two specific phonemes: the voiceless dental fricative /θ/ (as in think, method, and path) and the voiced dental fricative /ð/ (as in this, mother, and with). These two phonemes serve as the primary target sounds investigated in this research.

CHAPTER II

LITERATURE REVIEW

This chapter presents a review of the theoretical framework and related literature that ground this study. It encompasses discussion on phonetics and phonology, pronunciation accuracy, the characteristics of Acehnese EFL learners, and the articulatory mechanics of English dental fricatives. Additionally, it examines the concept of first language interference and reviews previous studies relevant to L1 phonological transfer.

A. Phonetics and Phonology

The study of speech sounds' physical characteristics, such as how the vocal organs make them (articulatory phonetics), how they are transmitted (acoustic phonetics), and how they are perceived (auditory phonetics), is known as phonetics. Phonology, on the other hand, is the study of language sound systems and how sounds are represented in the mind. Understanding both is crucial for assessing pronunciation correctness, according to Roach (2009), since phonology explains a sound's purpose within a particular language, while phonetics gives a sound's technical description.

According to Michael K. C. McMahon (2006), in contrast to phonology, which is concerned with the “function,” “organization,” or “patterning” of sounds, phonetics focuses on the mechanics of sound creation and transmission, regardless of how the sounds function within a language system. Studying the relationships

between various phonemes and their operational roles in language falls within the scope of phonology, a closely related yet distinct field that examines the abstract aspects of language sounds. Consequently, a comprehensive understanding of sound usage in English speech requires the integration of both phonetics and phonology. Many significant differences in sound are not caused by phoneme discrepancies. For example, stress is important. For example, when the first syllable of the word “import” is stronger than the second, English speakers perceive it as a noun; when the second syllable is stronger, they perceive it as a verb. Intonation is also very important. The word “right” is more likely to be interpreted as a question or an invitation to proceed when it is said with a rising pitch, whereas it is more likely to be interpreted as an affirmation or agreement when it is spoken with a falling pitch. Suprasegmental sound variations that transcend multiple segments (phonemes) are demonstrated in these examples. Because Aceh phonology does not produce fricative sounds like English does, learners often substitute the closest sounds.

Compared to English, the Acehnese language has a comparatively simple consonant system but a complex vowel system. Acehnese has a large number of monophthongs and diphthongs, including oral and nasal vowels, according to Asyik (1987). However, Acehnese lacks a number of English consonant sounds. The “dental fricative” group is the most conspicuously absent. “Stops”(plosives) occupy the “dental” area in Acehnese phonetics, including: /t/ (voiceless alveolar stop); /d/ (voiced alveolar stop); /th/ (aspirated voiceless stop often confused with the English “th”).

Example of Acehese words containing these phonemes include:

- The word **thèe** (meaning "to know"), which utilizes the aspirated voiceless stop /t^h/. Physically, the release of this air feels similar to the English fricative /θ/, yet it remains a "stop" rather than a continuous "fricative" because the airflow is completely blocked before being released.
- The word **lhèe** (meaning "three"), which demonstrates how the tongue interacts differently with the alveolar ridge compared to the interdental positioning required in English.

There is no practical need in Acehese phonology for the speaker to put their tongue between their teeth in order to produce a continuous stream of air (fricative). As a result, the tongue develops a physical habit of automatically striking the alveolar ridge, which is located behind the upper teeth, rather than the teeth.

English phonology, on the other hand, makes extensive use of a variety of fricatives. The dental fricatives /θ/ (voiceless) and /ð/ (voiced) are two of the most noticeable. Phonetically, these sounds necessitate a particular articulatory gesture: air must be squeezed out as the tongue tip is pressed up against or slightly between the upper and lower teeth. These sounds are separate phonemes phonologically. This implies that a word's meaning can be altered by substituting them with different sounds (e.g., changing thin /θɪn/ to tin /tɪn/ or sin /sɪn/). Acehese speakers frequently view the English /θ/ as a variant of their native /t^h/ or /t/ since they are used to aspirated stops /t^h/. The learner's brain maps the

unknown English sound onto the closest familiar Acehnese sound, a phenomenon known as “phonological deafening.” As a result, the student makes a “stop” sound rather than a “fricative” sound, which is what Lado (1957) refers to as phonological interference.

The primary difference between the two systems lies in the Manner of Articulation and the Place of Articulation:

Table 2.1

Phonological Contrast Matrix between English and Acehnese Sound Systems

Feature	Acehnese System	English System
Dental Fricatives (/θ/ and /ð/)	Completely Absent.	Essential Phonemes (/θ/and/ð/).
Aspiration	Distinctive feature in stops. (e.g., /th/ in thèë)	Non-phonemic positional variation
Primary Articulatory Position	Alveolar ridge (tongue tip touches ridge)	Interdental(tongue between teeth)

Source: Adapted from from A Contextual Grammar of Acehnese Sentences (Asyik, 1987) and English Phonetics and Phonology (Roach, 2009).

Acehnese speakers frequently interpret the English /θ/ as a variant of their native (th) or (t) since they are used to aspirated stops (th). The learner's brain maps the unknown English sound onto the closest familiar Acehnese sound, a phenomenon known as “phonological deafening.” As a result, the student makes a “stop” sound rather than a “fricative” sound, which is what Lado (1957) refers to as phonological interference.

B. The Organs of Speech

The human body's different organs, known as articulators, are involved in the production of speech sounds. The tongue, teeth, lips, vocal cords, lungs, and hard and soft palates are among them. The “place of articulation” where airflow is blocked and the “manner of articulation” how airflow is blocked determine which sounds are produced.

Michael K. C. McMahon (2006) states that, with the exception of the so-called glottalic and velaric airstream mechanisms (see below), the respiratory mechanism, the laryngeal mechanism, and the oral and nasal mechanisms combine to generate speech sounds in English. The primary anatomical landmarks important for phonetic studies are highlighted in Figure 1.1, which depicts a mid-line (sagittal) view of the head and neck. These landmarks make up the speech organs inside the vocal tract.

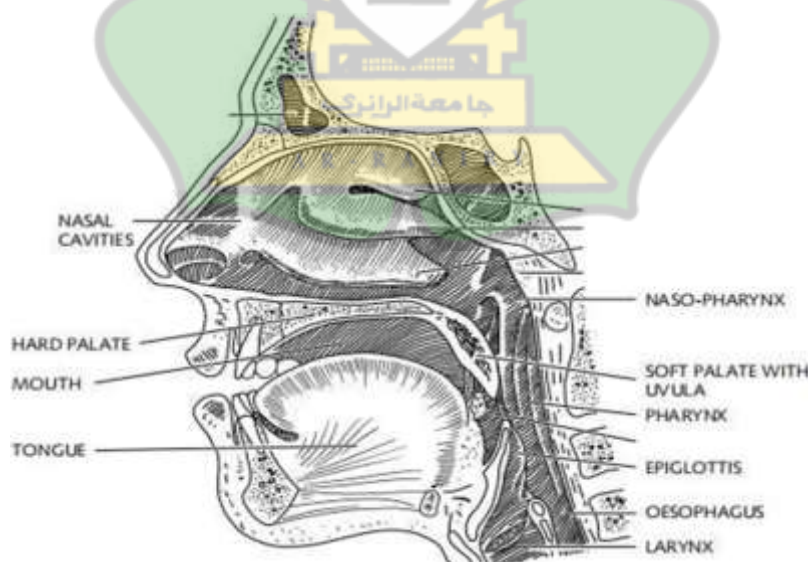


Figure 2 .1 Sagittal section of the nose, mouth, pharynx, and larynx. (Source: Armstrong 1939, as cited in Michael K. C. McMahon 2006).

The vocal tract interacts intricately throughout the physiological creation of speech sounds. The nasal cavities, hard palate, tongue, and larynx are among the physical markers that are essential for phonetic studies, as shown in Figure 1.1. The larynx controls the phonemes' voicing, but the tongue's synchronization with the teeth (mouth area) is the main emphasis when producing dental fricatives.

- The Tongue

The most adaptable active articulator is the tongue. The tip of the tongue is crucial in producing the dental fricatives /θ/ and /ð/. To make a small opening for the airflow, the tongue must advance in the direction of the teeth. Acehnese speakers frequently make the error of putting their tongue too far back (on the alveolar ridge), which causes them to produce the stop sounds /t/ or /d/ rather than the fricative sounds.

- Teeth and Mouth

Passive articulators are the upper incisors. The mouth position from which air is emitted is seen in the figure. Air is compelled to pass through the space between the tongue and the teeth during interdental noises. The friction that distinguishes the sounds /θ/ and /ð/ happens at this critical point.

- Alveolar Ridge and Hard Palate

The alveolar ridge is located just beyond the upper incisors (as indicated by the indentation in the figure). The Acehnese language produces the sounds /t/ and /d/ in this region. This example serves to highlight that the tongue must extend past the hard palate and alveolar ridge in the direction of the teeth in order to form a proper /θ/.

- Larynx

The vocal cords are found in the larynx, which is situated at the base of the throat. To differentiate between /θ/ (voiceless) and /ð/ (voiced), the larynx's function is essential. The primary airway from the lungs in the picture is the larynx. Whether a dental fricative sound has a voiced quality or is just a stream of air without vibration depends on the larynx's vibration.

- Oral and Nasal Cavities

The dental fricative sounds /θ/ and /ð/ are produced orally, which requires raising the soft palate (velum) to seal off the nasal cavities and allow all air to pass via the mouth.

The flow of air from the lungs via the vocal tract, where it is altered by different organs to produce distinct sounds, is what produces speech sounds. Together, these organs are referred to as articulators. They are separated into two categories: active articulators, which include moving organs like the tongue, and passive articulators, which include stationary organs like the teeth.

The lungs and trachea, the larynx and vocal cords, the tongue, the teeth, the alveolar ridge, the palate, the velum and the lips are the main organs that produce English speaking sounds, according to Roach (2009). Speech is powered by the lungs. The flow of air expelled from the lungs is known as the “pulmonic regressive airstream”, and they supply it. This air ascends to the larynx via the trachea, or windpipe. The voice cords are found in the larynx, which is located in the neck. The glottis, the area between the vocal cords, can vibrate to produce “voiced” sounds (like /ð/) or stay open for “voiceless” sounds (like /θ/).

The tongue is the most significant and adaptable active articulator. The tip (apex), the blade, the front, the back (dorsum), and the root are its several divisions. The tongue's "tip", as it approaches the upper teeth, is the most important part in making dental fricatives. The teeth serve as passive articulators, particularly the top front teeth. The tongue is positioned between the upper and lower teeth (interdental position) or comes into touch with the inside surface of the upper teeth when making English dental sounds.

Just beyond the upper front teeth is this firm, bony ridge. For several English sounds, including /t/, /d/, and /s/, it is crucial. For instance, this anatomical ridge is where the tongue tip makes contact or creates a narrow constriction to accurately produce the initial plosive sounds in "top" /tɒp/ and "dog" /dɒg/, as well as the sibilant friction sound in "sun" /sʌn/. The alveolar ridge is frequently used incorrectly by Acehnese speakers to generate /θ/ and /ð/, which results in "stop" sounds rather than "fricatives." The roof of the mouth is known as the hard palate. The rear portion of the roof of the mouth is known as the soft palate, or velum. Air escapes through the mouth (oral noises) when the velum is raised, and through the nose (nasal sounds) when it is dropped. To alter the form of the oral cavity and the sound made, the lips can be rounded, brought close to the teeth (labiodental), or forced together (bilabial).

The primary cause of Aceh students' interference is their lack of coordination between their "Tongue" (active articulator) and "Teeth" (passive articulator). The difference between /θ/ and /ð/ only occurs in the larynx (Laring). /θ/(voiceless), /ð/(voiced). To illustrate this laryngeal contrast, consider the English minimal pairs

such as "thigh" /θaɪ/ versus "thy" /ðaɪ/, or the phonetic difference between the nouns and verbs like "breath" /breθ/ and "breathe" /bri:ð/.

1. English Dental Fricatives

Dental fricatives in English phonology are made by pressing the tip of the tongue between the teeth or against the upper teeth, which causes air to escape and generate a friction sound. Based on how the voice cords vibrate, these are divided into two categories. There are roughly 12–20 vowels and 24 consonants in the complex English system, depending on the dialect. Roach (2009) asserts that the use of fricatives is what makes English phonology unique.

The two distinct dental fricatives in English are /θ/ and /ð/. The tongue is positioned between the teeth to produce these interdental sounds. Vowel Length: Indonesian learners frequently struggle with the distinction between short and long vowels in English, such as ship versus sheep. Consonant Clusters: Complex consonant clusters at the start or finish of words (such as strong) are permitted in English.

2. The Voiceless Dental Fricatives/θ/

Fricatives are consonants that produce a hissing sound when air escapes through a small opening. Fricatives are present in most languages, with s being the most prevalent. As long as you have adequate air in your lungs, you can continuously produce fricatives since they are continuant consonants. English possesses two unique dental fricatives, /θ/ and /ð/. These sounds are interdental, meaning the tongue is placed between the teeth. Articulator: The upper teeth serve as the passive articulator for this sound, while the “tip” or “blade” of the tongue

serves as the active articulator. Mechanism: Without any vocal cord vibration, the air travels via a small opening between the tongue and the teeth, producing a constant hissing sound. Examples: Occurs in terms like think /θɪŋk/, healthy /'helθi/, and bath/bɑ:θ/. Common Difficulty: This sound is frequently replaced with the aspirated stop [t] or the voiceless alveolar stop /t/ for Acehnese learners.

3. The Voiced Dental Fricatives /ð/

The vocal folds vibrate to produce a buzzing friction when the tongue tip is positioned between or behind the upper teeth to produce the voiced dental fricative /ð/ (Roach, 2009). The /ð/sound is the voiced counterpart of /θ/, where the vocal cords vibrate during production. This sound is commonly found in functional words such as the, this, mother, and with. Articulator: The tongue and teeth are positioned just like in the voiceless variant. Mechanism: In contrast to /θ/, this sound is produced by the larynx's vocal cords vibrating. Although the airflow is constant, there is a "buzzing" sound. Examples: Occurs in words like "the," "mother," and "breathe." Common Difficulty: Because the vibration in /d/ is the closest known feature in their home language, Acehnese learners frequently substitute this sound with the voiced alveolar stop /d/.

One of the most characteristic phonemes in the English sound system is the voiced dental fricative, which is symbolically represented by the character /ð/ in the International Phonetic Alphabet (IPA). In order to articulate this sound, the tongue tip is positioned either just below the top incisors or between the upper and lower incisors, producing a small opening for airflow. Because it is categorized as

a fricative sound, the air leaving the lungs is driven through this small opening rather than entirely stopped, creating a continuous, quiet hissing sound.

The action of the vocal cords in the larynx is the primary characteristic that sets the phoneme /ð/ apart from its voiceless cousin, /θ/. In contrast to /θ/, which is only a stream of air without vibration, /ð/ requires the vocal cords to vibrate, giving the sound a heavier or “humming” feel. The beginning of the words *the*, *this*, *that*, and *they*, as well as the middle and end of terms like *mother*, *weather*, and *breathe*, are examples of highly frequent function words in English that contain this phoneme. The generation of the phoneme /ð/ frequently presents a major phonetic barrier for English learners with an Acehnese language background. This is due to the absence of a category for the dental fricative sound in the Acehnese language's phonological inventory. As a result, pupils often substitute sounds, a process known as native language interference. The most similar sound in the Acehnese language, the consonant /d/ (voiced alveolar stop), is automatically substituted by the kids because their brains and speech organs lack the muscle memory for the vibrating interdental tongue position.

Pronouncing “the” as “de” or using /ð/ instead of /d/ indicates a structural deficiency in articulation mastery. By totally stopping the airflow (stop) instead of allowing it to flow (fricative), pupils commit a technical error. According to Robert Lado's theory of Contrastive Analysis, the fundamental problem with pronunciation accuracy among EFL learners in Aceh is this incapacity to maintain airflow while vibrating the vocal cords at the interdental location. This sound is very common in English function words: At the beginning of words: *The* /ðə/,

This /ðis/, They /ðei/. In the middle of words: Mother /'mʌðə/, Weather /'weðə/, Clothing /'kloʊðɪŋ/. Word-final: Breathe /bri:ð/, Smooth/smu:ð/, With /wɪð/.

C. Phonological System of the Acehnese Language

Linguists are well-known for Acehnese's incredibly complex vowel system and particular consonant restrictions. Acehnese has one of the most intricate vowel inventories among Austronesian languages, according to Asyik (1987) and Durie (1985). The Acehnese language has a distinct phonological structure that is very different from the English system, especially when it comes to the inventory of consonants.

The phonological system of the Acehnese language is distinct and intricate, especially in its vowel system. Asyik (1987) asserts that Acehnese has an exceptionally rich variety of vowels, including oral and nasal vowels with almost 20 monophthongs and a variety of diphthongs. The Acehnese consonant system is often simpler than English, especially when it comes to fricatives, despite its vowel richness. The use of pauses or plosives (explosive noises) is more prevalent in Acehnese. The main cause of Acehnese speakers' difficulties with English sounds that have no direct equivalent in their own tongue is this basic distinction.

The lack of the dental fricatives /θ/ and /ð/ is one of the most important aspects of Acehnese phonology. There are no terms in the Acehnese native vocabulary that call for the tongue to be positioned between teeth (interdental) in order to create a continuous stream of air. Rather, stop sounds like /t/ (voiceless), /d/ (voiced), and a number of aspirated consonants like /ph/, /th/, /kh/, and /ch/

predominate in the dental and alveolar areas of Acehnese. When learners try to generate the English “th” sound, they encounter both physical and mental obstacles due to the lack of a fricative category at this dental site of articulation.

Learners are frequently confused by the aspirated feature (loud burst of air) in the Acehnese language, such as the sound (th) in the word thèë (tahu) or (ph) in the word phom (paham). Many Acehnese learners erroneously believe that the aspirated (th) sound in their language is the same as the English /θ/ sound. The (th) sound in Acehnese is a stop where airflow is entirely obstructed for a moment before being released with a burst, but /θ/ in English is a fricative where air must continue to flow without a total blockage. These two sounds are technically extremely different.

Phonological Interference is the result of this structural gap. Acehnese speakers automatically map English sounds into the closest “slot” in the Acehnese phonological map because their articulatory and auditory systems are trained to the system of “stops and aspiration. Because of this, sharp, exploding “t” or “d” sounds frequently take the role of English fricative sounds. In order to overcome the limits of their phonemic system and muscle memory, learners automatically carry out this substitution process, which ultimately has a major impact on how well they pronounce English.

Table 2.2*Comparison of English and Acehnese Consonant Inventories*

Feature	English	Acehnese
Dental Fricatives (/θ, ð/)	Present(Interdental)	Absent
Aspirated (/th/)	Only as an all ophone of /t/ Large	Distinct Phoneme Limited(/s,h/,and/f/in
Tongue Position	(/f,v, θ, ð, s, z,ʃ, ʒ, h/)	Some dialects)

Source: Adapted from Ladefoged & Johnson (2011), Roach (2009), and Yusuf (2012).

The struggle for Acehnese learners is not merely physical but cognitive. According to Pillai et al. (2015), a learner will find it difficult to distinguish between sounds that are “acoustically close” but “articulatorily different” in their L1, such as the Acehnese aspirated (th) and the English fricative/θ/. Students believe that the English /θ/ should be replaced with their native aspirated (th). Phonetically, however, the Acehnese (th) necessitates a complete blocking of air followed by a burst (halt), whereas the English /θ/ requires a continuing flow of air (fricative). The essence of the interference found in this investigation is this mismatch. The English sound is a fricative (air flows continuously), whereas the Acehnese sound is a stop (air is blocked).

1. The Consonant System of Acehnese

The Acehnese consonant system is characterized by a high reliance on stops (plosives) and a unique feature of aspiration. Unlike English, which has a diverse

set of fricatives, Acehnese consonants are predominantly produced by completely blocking the airflow before releasing it.

According to Asyik (1987) and Durie (1985), Acehnese consonants include voiceless and voiced stops /p, b, t, d, c, ɟ, k, g/. A distinctive characteristic of this system is the presence of aspirated stops /p^h, t^h, c^h, k^h/. In these sounds, a strong puff of air follows the release of the blockage. This aspiration is often what Acehnese learners confuse with English fricatives. For example, the Acehnese word *thèë* (to know) contains an aspirated stop (t^h), which physically feels similar to the English /θ/, yet remains a “stop” rather than a “fricative.” This fundamental difference in the manner of articulation is the root of phonological interference.

To provide empirical clarity, prominent examples of native Acehnese lexical items containing these aspirated phonemes include:

- Fonem /p^h/: The word **phông** (meaning "to begin" or "start").
- Fonem /t^h/: The word **thèë** (meaning "to know"), where the physical sensation of the explosive air release mimics the friction of the English /θ/, yet technically remains a "stop" rather than a true "fricative."
- Fonem /c^h/: The word **chot** (meaning "high" or "hill").
- Fonem /k^h/: The word **khêng** (meaning "dry" or "stiff").

This fundamental divergence in the manner of articulation represents the primary root of the cross-linguistic phonological interference observed in the field.

2. Sound Substitution in Acehese Dialects

Sound substitution is a linguistic phenomenon where a speaker replaces an unfamiliar sound with a familiar one from their native phonetic repertoire. In the context of Acehese EFL learners, substitution occurs systematically due to the absence of dental fricatives in all Acehese dialects.

a. Substitution of /θ/ (Voiceless)

Because the Acehese language does not possess the voiceless dental fricative /θ/, learners typically substitute it with the voiceless alveolar stop /t/ or the aspirated stop [tʰ]. In many North Aceh and Banda Aceh dialects, the tongue is naturally trained to strike the alveolar ridge or the back of the teeth sharply. Consequently, instead of producing a continuous friction in the word *think* /θɪŋk/, the learner produces a sudden burst of air, resulting in [tʰɪŋk] or simply [tɪŋk].

b. Substitution of /ð/ (Voiced)

The voiced dental fricative /ð/ is almost universally substituted with the voiced alveolar stop /d/. Since /ð/ requires the vocal cords to vibrate while air flows through a narrow dental gap a combination that does not exist in Acehese learners opt for the nearest voiced equivalent. For example, the word *that* /ðæt/ is frequently pronounced as [dæt].

D. Technical Phonetic Variations and Interference Patterns

The technical reasons why Acehese speakers find it difficult to pronounce English dental fricatives and how this interference manifests itself in actual pronunciation are thoroughly examined in the accompanying table.

Table 2.3*Distribution of Voiceless and Voiced Dental Fricatives in English Words*

Linguistic Feature	English Dental Fricatives (/θ, ð/)	Acehnese Phonological System	Result of Interference (Error)
Phoneme Availability	Present. Essential for distinguishing meaning.	Absent. No native interdental fricatives exist.	Learners substitute them with the closest native stop.
Manner of Articulation	Fricative. Continuous airflow through a narrow gap.	Stop (Plosive). Complete blockage of air followed by a release.	Continuous air is replaced by a “sharp” or “exploded” sound.
Place of Articulation	Interdental. Tongue tip is placed between the teeth.	Alveolar. Tongue tip touches the ridge behind the teeth.	The tongue fails to reach the interdental position.
Aspiration	Not a primary phonemic feature for “th” sounds.	Aspirated Stops. Features sounds like [th] (e.g., <i>thèë</i>).	Learners mistake their native aspirated [th] for the English /θ/.

Source: Adapted from Roach (2009).

E. Example of Phonological Substitution on Dental Fricatives

This table provides concrete examples of how sound changes occur when Acehnese speakers pronounce English words:

Table 2.4*Example of Phonological Substitution on Dental Fricatives*

Target Word (English)	Correct Phonetic (IPA)	Acehnese Learner's Production	Substitution Type
Think	/θɪŋk/	[tʰɪŋk] or [tɪŋk]	/θ/ (fricative) \right arrow [t] (stop)
Three	/θri:/	[tri:]	/θ/ (fricative) \right arrow [t] (stop)
Thank	/θæŋk/	[tæŋk]	/θ/ (fricative) \right arrow [t] (stop)
The	/ðə/	[də]	/ð/ (voiced) \right arrow [d] (stop)
Mother	/ˈmʌðə/	[ˈmʌdə]	/ð/ (voiced) \right arrow [d] (stop)
Father	/ˈfɑ:ðə/	[ˈpɑ:də] or [ˈfɑ:də]	/ð/ (voiced) \right arrow [d] (stop)

Source: Adapted from Roach (2009)

1. Language Transfer and Interference

The impact of a learner's first language (L1) on the acquisition of a target language (L2) is referred to as language transfer, or cross-linguistic influence. “Odlin (1989) defines transfer as the impact brought about by the similarities and contrasts between the target language and any other previously learned language. Positive transfer and negative transfer are two different sorts of this mechanism. When the structures of the two languages are the same, positive transfer takes place, which makes learning easier. On the other hand, negative transfer, often known as “interference”, happens when the original language's habits diverge from the target language's rules, resulting in output problems.

Positive Transfer: This operational process takes place when the structural features of both the native and target languages align perfectly, thereby accelerating and easing the acquisition process. For instance, an example of

positive transfer occurs when an Acehnese student pronounces the English voiceless alveolar stop /t/ in words like "**cat**" or the voiced alveolar stop /d/ in "**dog**". Because both Acehnese and English share these identical plosive structures, the speaker's native articulatory habits naturally facilitate a flawless production in English without requiring explicit phonetic modification.

Negative Transfer: Conversely, negative transfer frequently termed "interference" occurs when the deeply ingrained articulation habits of the native language fundamentally diverge from the phonetic rules of the target language, directly generating systematic errors in spoken output. A prime example of this negative transfer is the core problem of this study: the mispronunciation of the English dental fricatives /θ/ and /ð/. Because the native Acehnese sound system completely lacks these interdental fricatives, learners unconsciously rely on negative transfer to substitute them with familiar native plosives, making the word "**three**" /θri:/ sound identical to "**tree**" [tri:].

In particular, phonological interference occurs when a learner's native sound system prevents them from correctly perceiving and producing L2 phonemes. According to "Robert Lado (1957)"'s Contrastive Analysis Hypothesis, the mother tongue's interference is the main obstacle to learning a second language. According to Lado, learners frequently transmit both the distribution and the forms and meanings of their native language to the new language. When it comes to pronunciation, this means that if a certain sound is absent from the learner's L1, the learner will inadvertently replace it with the closest equivalent sound from their native inventory, leading to a "foreign accent" or phonological error.

The production of dental fricatives is where interference is most noticeable in Acehnese EFL learners. When learners encounter the English fricatives /θ/ and /ð/, they experience a “structural gap” since the Acehnese phonological system is strongly based on stops and aspirated consonants. The interference happens as a cognitive and articulatory shortcut: the brain detects a foreign sound but instructs the articulatory organs to perform an alveolar stop instead since it lacks the muscle memory required for interdental placement. This systematic error is a foreseeable linguistic outcome of the L1 phonological filter that all L2 data must pass through, not just an indication of poor learning.

2. Contrastive Analysis Hypothesis (CAH)

Proposed by Lado (1957), this hypothesis suggests that the principal barrier to second language acquisition is the interference from the first language. Learners tend to transfer the forms and meanings of their native language to the foreign language. If a specific sound exists in the target language but not in the native language, the learner will likely substitute it with the most similar sound available in their L1 repertoire.

The Contrastive Analysis Hypothesis, as pioneered by Lado (1957), posits that the principal barrier to second language acquisition is the interference of the mother tongue. According to this hypothesis, the difficulty in learning a new language is determined by the degree of difference between the learner's native language (L1) and the target language (L2). “Lado (1957)” famously stated that “those elements that are similar to [the learner's] native language will be simple for him, and those elements that are different will be difficult.” In the realm of

phonology, this implies that when an L2 sound is entirely absent from the learner's L1 phonetic inventory, the learner will struggle to perceive and produce that sound accurately.

Furthermore, “Brown (2007)” explains that this difficulty arises because learners tend to transfer the phonological habits of their native language to the foreign language. When a structural gap exists meaning a specific sound in English does not have a corresponding phoneme in the native language the learner’s articulatory organs lack the necessary muscle memory to execute the unfamiliar movement. In the case of dental fricatives /θ/ and /ð/, which are absent in the Acehnese sound system, CAH predicts a high level of difficulty. Because these sounds are not part of the learners' pre-existing linguistic map, they are often perceived as sounds that do exist in their L1, leading to what “Weinreich (1953)” describes as “perceptual deafness,” where the learner cannot distinguish the foreign sound from its closest native equivalent. The consequence of this absence is the systematic substitution of sounds. As noted by “Ellis (1994)”, when learners encounter a “new” sound that has no equivalent in their L1, they do not simply fail to produce it; instead, they unconsciously replace it with the most “available” sound in their native repertoire.

For Acehnese learners, this means the interdental fricative /θ/ is frequently substituted with the voiceless alveolar stop /t/, and /ð/ is replaced by the voiced alveolar stop /d/. This process confirms the CAH prediction that the absence of a specific phonetic category in the native language is the primary cause of

phonological interference and the persistence of a “foreign accent” in second language production.

3. Phonological Interference

Phonological interference specifically refers to the distortion of target language sounds by the speaker's native sound system. For Acehese speakers, the /θ/ sound is often substituted with [t] or [th], while the /ð/ sound is frequently replaced by [d]. This happens because the brain and articulators of the speaker are conditioned to the phonetic habits of the Acehese language.

Phonological interference occurs when the sound system of the native language (L1) affects the production and perception of sounds in the target language (L2). According to “Skiba (1992)”, interference is a natural outcome of language contact where the learner carries over the habits of their mother tongue into their second language speech. This phenomenon is most prominent when a learner encounters a phoneme in the target language that does not exist in their native phonetic inventory. In such cases, the learner's brain tends to “filter” the new sound through the existing categories of their L1, leading to a distorted realization of the L2 sound.

There are several levels of phonological interference that often occur among EFL learners. As categorized by “Weinreich (1953), one of the most common types is ““under-differentiation, which happens when the learner fails to distinguish two phonemes in the target language because their native language treats them as a single sound or does not possess them at all. For instance, in

English, the sounds /θ/ and /t/ are distinct phonemes that change word meanings (e.g., “thick vs. tick). However, for an Acehnese learner whose language lacks the dental fricative /θ/, the brain may perceive both sounds as identical, causing the learner to substitute /θ/ with the more familiar /t/.

Furthermore, phonological interference is not merely a cognitive error but also an articulatory one. “Avery and Ehrlich (1992)” argue that the physical movements of the speech organs such as the tongue, lips, and vocal cords are deeply ingrained as “muscle memory” from the native language. When Acehnese learners attempt to produce English dental fricatives, their articulatory organs instinctively revert to the closest familiar positions in Acehnese phonology, typically the alveolar stops. This automatic substitution is a manifestation of phonological interference, where the structural constraints of the L1 prevent the accurate execution of L2 phonetic rules, resulting in what is commonly perceived as a “foreign accent.”

F. Previous Studies

Several studies have investigated phonological interference among Indonesian learners. A study by Yusuf (2012) highlighted the complexity of Acehnese phonology and its impact on English vowel production. Furthermore, research on other regional languages in Indonesia has consistently shown that the absence of dental fricatives in local dialects leads to significant pronunciation errors in EFL (English as a Foreign Language) contexts. This study aims to fill the gap by focusing specifically on the interference patterns found in the Acehnese community in Gampong Iboih Sabang City.

Several studies have been conducted to investigate the impact of first language interference on English pronunciation, particularly regarding dental fricatives. These studies provide a foundation for the current research and highlight the persistent challenges faced by EFL learners from various linguistic backgrounds.

The first study was conducted by “Pillai et al. (2015), titled *The Pronunciation of English Vowels by Acehnese Speakers*.” While their primary focus was on vowel production, the researchers noted that Acehnese speakers consistently struggled with English consonants that do not exist in the Acehnese phonetic inventory. Their findings suggested that the complex vowel system of Acehnese does not necessarily ease the acquisition of English consonants, reinforcing the idea that specific phonological gaps lead to predictable substitution errors.

Another relevant study is by “Hadi (2018)”, who investigated the phonological interference of local languages on English pronunciation among Indonesian students. The results indicated that students from various ethnic backgrounds in Indonesia, including those from Sumatra, tended to replace the English /θ/ and /ð/ with alveolar stops /t/ and /d/. This research emphasized that the absence of interdental sounds in most Indonesian local languages is a major factor in the lack of pronunciation accuracy.

These previous studies demonstrate a common theme: the structural difference between a learner's native language and English is the primary source of pronunciation errors. However, most of these studies focus on Indonesian learners

in general. This research aims to fill the gap by focusing specifically on “Acehnese EFL learners”, particularly in the context of how their unique aspirated stops in the Acehnese language further complicate the production of English dental fricatives.



CHAPTER III

RESEARCH METHODOLOGY

A. Research Design

The researcher uses a descriptive qualitative approach in this investigation. A method for investigating and comprehending the significance that people or groups attach to a social or human issue is qualitative research (Creswell, 2014). This approach was chosen since the main objective of the study is to give a methodical and precise account of the phonological interference patterns among native Acehese speakers, particularly with regard to dental fricatives (/θ/ and /ð/). Instead of using numerical or statistical data, the results are presented through descriptive analysis and phonetic transcriptions.

B. Participants

This study was conducted in Gampong Iboih, Sabang City, a region characterized by active international tourism where local Acehese native speakers frequently interact in English. Purposive sampling was employed to select eight adult participants based on specific criteria:

1. They are native speakers of the Acehese language using it as their primary L1;
2. They are adults aged 18–40; (3) they have completed at least formal high school education (SMA/equivalent or higher);
3. They currently reside in Gampong Iboih, Sabang City. This specific geographical scope ensures that the research captures natural L1 phonological

interference among non-academic local EFL learners in a real world communicative environment.

C. Research Instrument

This study's tool is a pronunciation exam made up of phrases and a list of words. 24 words with the English dental fricatives /θ/ and /ð/ in initial, medial, and final positions are included in the list. To make sure the data is adequately recorded, the researcher uses a number of tools:

1. Word List and Sentence Tasks: A meticulously selected list of words and phrases with the target sounds /θ/ and /ð/ in initial, medial, and final positions.
2. Audio Recorder: A top notch Smartphone based digital voice recorder to record the participants' speech's acoustic information.
3. The International Phonetic Alphabet, or IPA Chart, is a guide used to convert recorded sounds into phonetic symbols.

D. Data Collection Technique

These methodical processes are followed in the data collection process:

1. Preparation: The researcher makes sure the recording device is operational and prepares the word list.
2. Briefing: The researcher informs the participants of the study's objectives and obtains their permission to record them.
3. Reading Task: Each participant is required to read aloud 10 phrases and a list of 24 words.

4. Recording: The researcher records the participants' voices while they read.

This guarantees the preservation of all phonetic details for the transcribing stage.

- a. Words List (24 Words)

This is a list of 24 words. Twelve words for the phonemes /θ/ (voiceless) and /ð/ (voiced) are included in this list.

Voiceless Dental Fricative /θ/ Target Words (12 Words):

1. **Think** | Target IPA: /θɪŋk/ | Realization: [tɪŋk] or [tʰɪŋk] | Position: Initial (Voiceless stop substitution)
2. **Three** | Target IPA: /θri:/ | Realization: [tri:] | Position: Initial (Voiceless stop substitution)
3. **Thank** | Target IPA: /θæŋk/ | Realization: [tæŋk] | Position: Initial (Voiceless stop substitution)
4. **Thin** | Target IPA: /θɪn/ | Realization: [tɪn] | Position: Initial (Voiceless stop substitution)
5. **Thick** | Target IPA: /θɪk/ | Realization: [tɪk] | Position: Initial (Voiceless stop substitution)
6. **Method** | Target IPA: /'meθəd/ | Realization: ['metət] | Position: Medial (Medial voiceless stop substitution)
7. **Author** | Target IPA: /'ɔ:θər/ | Realization: ['ɔ:tər] | Position: Medial (Medial voiceless stop substitution)
8. **Healthy** | Target IPA: /'helθi/ | Realization: ['helti] | Position: Medial (Medial voiceless stop substitution)

9. **Anything** | Target IPA: /'eniθɪŋ/ | Realization: ['enɪtɪŋ] | Position: Medial (Medial voiceless stop substitution)
10. **Path** | Target IPA: /pæθ/ | Realization: [pæt] | Position: Final (Final voiceless stop substitution)
11. **Bath** | Target IPA: /bæθ/ | Realization: [bæt] | Position: Final (Final voiceless stop substitution)
12. **Tooth** | Target IPA: /tu:θ/ | Realization: [tu:t] | Position: Final (Final voiceless stop substitution)

Voiced Dental Fricative /ð/ Target Words (12 Words):

1. **That** | Target IPA: /ðæt/ | Realization: [dæt] | Position: Initial (Voiced stop substitution)
2. **This** | Target IPA: /ðɪs/ | Realization: [dɪs] | Position: Initial (Voiced stop substitution)
3. **They** | Target IPA: /ðeɪ/ | Realization: [deɪ] | Position: Initial (Voiced stop substitution)
4. **There** | Target IPA: /ðeər/ | Realization: [deər] | Position: Initial (Voiced stop substitution)
5. **Mother** | Target IPA: /'mʌðər/ | Realization: ['mʌdər] | Position: Medial (Medial voiced stop substitution)
6. **Father** | Target IPA: /'fɑ:ðər/ | Realization: ['fɑ:dər] | Position: Medial (Medial voiced stop substitution)

7. **Brother** | Target IPA: /'brʌðər/ | Realization: ['brʌdər] | Position: Medial
(Medial voiced stop substitution)
8. **Weather** | Target IPA: /'weðər/ | Realization: ['wedər] | Position: Medial
(Medial voiced stop substitution)
9. **Together** | Target IPA: /tə'geðər/ | Realization: [tə'gedər] | Position: Medial
(Medial voiced stop substitution)
10. **Smooth** | Target IPA: /smu:ð/ | Realization: [smu:d] | Position: Final (Final
voiced stop substitution)
11. **Breathe** | Target IPA: /bri:ð/ | Realization: [bri:d] | Position: Final (Final
voiced stop substitution)
12. **With** | Target IPA: /wɪð/ | Realization: [wɪd] | Position: Final (Final voiced
stop substitution)

b. Sentence List (10 Sentences)

The participants move on to the second section of the test, the sentence list, after finishing the word list. The purpose of the following sentences is to assess the participants' pronunciation in a more integrated and natural speech context. This enables the researcher to see if, when the phonemes are incorporated into sentences, the phonological interference stays constant.

1. **The** **three** boys **thought** it was **their** **birth**day.
2. My **moth**er and **fath**er like **this** **weath**er.
3. **The**y go **throu**gh **the** **bath**room to brush **their** **teeth**.
4. **There** is **noth**ing in my **mouth**.

5. **That** health**th**y man is my brother.
6. **They** have **th**irty books in **th**at room.
7. I can breathe smoothly with **this** mask.
8. I **th**ink **th**ey are coming **this** month.
9. He said anything about **th**eir clothes.
10. **Then**, **th**ey walked to **th**e North side.

E. Data Analysis Procedures

The collected audio data is analyzed through a systematic error analysis process consisting of the following steps:

1. **Phonetic Transcription:** To maintain analytical rigor, this study strictly distinguishes between phonemic target representations and phonetic realizations based on International Phonetic Alphabet (IPA) standards. Forms are enclosed in slashes /.../ to denote abstract underlying phonemes (e.g., target voiceless dental fricative /θ/ in /θɪŋk/). Conversely, the actual acoustic productions executed by participants including substitution errors and phonetic deviations are enclosed in square brackets [...] to indicate narrow phonetic transcriptions (e.g., learner realization [t^hɪŋk] or [tɪŋk]).
2. **Classification:** Any identified deviations or errors are categorized into specific types of phonetic substitution (e.g., substituting the dental fricative /θ/ with the alveolar stop [t] or [t^h]).
3. **Explanation:** Finally, the researcher explains the linguistic causes of these errors by contrasting the English phonological system with the native Acehnese phonological system, as discussed in Chapter II.

CHAPTER IV

FINDINGS AND DISCUSSION

This chapter consists of two main sections: research findings and discussion. The research findings will provide explanations and answers to the three research questions. Next, the discussion will relate these findings to previous studies. The empirical findings obtained from the data collection process provide an in-depth phonetic analysis. Data were collected through reading tasks recorded in audio format, consisting of a list of 24 words and a list of 10 sentences containing English dental fricatives (/θ/ and /ð/) in initial, medial, and final positions. The speech recordings produced by eight native Acehese speakers learning English as a foreign language (EFL) from Gampong Iboih, Sabang, were analyzed using narrow phonetic transcription.

A. Findings

This Chapter demonstrates that native Acehese EFL learners in Gampong Iboih, Sabang, experience systematic L1 interference when pronouncing English dental fricatives. The primary substitutions are /θ/ → [t]/[t^h] and /ð/ → [d]. These patterns align with Ellis's (1985). The underlying causes are structural gaps in the Acehese phonetic inventory, lack of interdental muscle memory, and negative cross-linguistic transfer from native alveolar and aspirated stops.

In accordance with the research design outlined in Chapter III, eight adult native Acehese speakers residing in Gampong Iboih, Sabang City, were selected

using purposive sampling. All participants completed formal high school education or higher, maintaining Acehnese as their primary home language (L1) while learning English as a foreign language (L2).

Participant 1 (P1)

Gender: Female | Age: 20 years old

Native Language (L1): Acehnese | Origin/Residence: Gampong Iboih, Sabang

Educational Background: EFL Undergraduate Student

Participant 2 (P2)

Gender: Male | Age: 21 years old

Native Language (L1): Acehnese | Origin/Residence: Gampong Iboih, Sabang

Educational Background: EFL Undergraduate Student

Participant 3 (P3)

Gender: Female | Age: 20 years old

Native Language (L1): Acehnese | Origin/Residence: Gampong Iboih, Sabang

Educational Background: EFL Undergraduate Student

Participant 4 (P4)

Gender: Male | Age: 22 years old

Native Language (L1): Acehnese | Origin/Residence: Gampong Iboih, Sabang

Educational Background: EFL Undergraduate Student

Participant 5 (P5)

Gender: Female | Age: 21 years old

Native Language (L1): Acehnese | Origin/Residence: Gampong Iboih, Sabang

Educational Background: EFL Undergraduate Student

Participant 6 (P6)

Gender: Female | Age: 20 years old

Native Language (L1): Acehnese | Origin/Residence: Gampong Iboih, Sabang

Educational Background: EFL Undergraduate Student

Participant 7 (P7)

Gender: Male | Age: 21 years old

Native Language (L1): Acehnese | Origin/Residence: Gampong Iboih, Sabang

Educational Background: EFL Undergraduate Student

Participant 8 (P8)

Gender: Female | Age: 22 years old

Native Language (L1): Acehnese | Origin/Residence: Gampong Iboih, Sabang

Educational Background: EFL Undergraduate Student

The recording results reveal a pervasive trend of pronunciation inaccuracy across all participants. Rather than articulating smooth, continuous friction at the interdental site, the participants predominantly substituted the voiceless dental fricative /θ/ with either the voiceless alveolar stop [t] or the aspirated stop [tʰ]. Similarly, the voiced dental fricative /ð/ was almost completely replaced by the voiced alveolar stop [d].

Word List Pronunciation Test Results (24 Target Words)

Voiceless Dental Fricative (/θ/)

1. Think [Initial] | Target: /θɪŋk/ | Realizations: P1 [tɪŋk], P2 [tɪnk], P3 [tɪŋk], P4 [θɪŋk], P5 [tɪnk], P6 [tɪŋk], P7 [tɪnk], P8 [tɪŋk] | Dominant: [tɪŋk] / [tɪnk] | Substitution: /θ/ → [t]/[tʰ] (Stop Substitution) | Status: Inaccurate (87.5% Inaccuracy)
2. Three [Initial] | Target: /θri:/ | Realizations: P1 [tri:], P2 [tri:], P3 [tʰri:], P4 [tri:], P5 [tri:], P6 [θri:], P7 [tri:], P8 [tri:] | Dominant: [tri:] | Substitution: /θ/ → [t] (Stop Substitution) | Status: Inaccurate (87.5% Inaccuracy)
3. Thirty [Initial] | Target: /'θɜ:ti/ | Realizations: P1 ['tɜ:ti], P2 ['tɜ:ti], P3 ['tʰɜ:ti], P4 ['tɜ:ti], P5 ['tɜ:ti], P6 ['tɜ:ti], P7 ['tʰɜ:ti], P8 ['tɜ:ti] | Dominant: ['tɜ:ti] | Substitution: /θ/ → [t] (Stop Substitution) | Status: Inaccurate (100% Inaccuracy)
4. Through [Initial] | Target: /θru:/ | Realizations: P1 [tru:], P2 [tru:], P3 [tʰru:], P4 [tru:], P5 [tru:], P6 [tru:], P7 [tʰru:], P8 [tru:] | Dominant: [tru:] | Substitution: /θ/ → [t] (Stop Substitution) | Status: Inaccurate (100% Inaccuracy)

5. Birthday [Medial] | Target: /'bɜ:θdeɪ/ | Realizations: P1 ['bɜ:tdeɪ], P2 ['bɜ:tdeɪ], P3 ['bɜ:tdeɪ], P4 ['bɜ:θdeɪ], P5 ['bɜ:tdeɪ], P6 ['bɜ:tdeɪ], P7 ['bɜ:tdeɪ], P8 ['bɜ:tdeɪ] | Dominant: ['bɜ:tdeɪ] | Substitution: /θ/ → [t] (Stop Substitution) | Status: Inaccurate (87.5% Inaccuracy)
6. Healthy [Medial] | Target: /'helθi/ | Realizations: P1 ['helti], P2 ['helti], P3 ['helti], P4 ['helti], P5 ['helti], P6 ['helθi], P7 ['helti], P8 ['helti] | Dominant: ['helti] | Substitution: /θ/ → [t] (Stop Substitution) | Status: Inaccurate (87.5% Inaccuracy)
7. Anything [Medial] | Target: /'eniθɪŋ/ | Realizations: P1 ['enitɪŋ], P2 ['enitɪŋ], P3 ['enitʰɪŋ], P4 ['enitɪŋ], P5 ['enitɪŋ], P6 ['enitɪŋ], P7 ['enitɪŋ], P8 ['enitɪŋ] | Dominant: ['enitɪŋ] | Substitution: /θ/ → [t] (Stop Substitution) | Status: Inaccurate (100% Inaccuracy)
8. Nothing [Medial] | Target: /'nʌθɪŋ/ | Realizations: P1 ['natɪŋ], P2 ['natɪŋ], P3 ['nʌθɪŋ], P4 ['natɪŋ], P5 ['natɪŋ], P6 ['natɪŋ], P7 ['natɪŋ], P8 ['natɪŋ] | Dominant: ['natɪŋ] | Substitution: /θ/ → [t] (Stop Substitution) | Status: Inaccurate (87.5% Inaccuracy)
9. Bath [Final] | Target: /bɑ:θ/ | Realizations: P1 [bɑ:t], P2 [bɑ:t], P3 [bɑ:t], P4 [bɑ:t], P5 [bɑ:t], P6 [bɑ:t], P7 [bɑ:t], P8 [bɑ:t] | Dominant: [bɑ:t] | Substitution: /θ/ → [t] (Stop Substitution) | Status: Inaccurate (100% Inaccuracy)
10. Teeth [Final] | Target: /ti:θ/ | Realizations: P1 [ti:t], P2 [ti:t], P3 [ti:t], P4 [ti:θ], P5 [ti:t], P6 [ti:t], P7 [ti:t], P8 [ti:t] | Dominant: [ti:t] | Substitution: /θ/ → [t] (Stop Substitution) | Status: Inaccurate (87.5% Inaccuracy)

11. Mouth [Final] | Target: /maʊθ/ | Realizations: P1 [maʊt], P2 [maʊt], P3 [maʊt], P4 [maʊt], P5 [maʊt], P6 [maʊt], P7 [maʊt], P8 [maʊt] | Dominant: [maʊt] | Substitution: /θ/ → [t] (Stop Substitution) | Status: Inaccurate (100% Inaccuracy)

12. Month [Final] | Target: /mʌnθ/ | Realizations: P1 [mʌnt], P2 [mʌnt], P3 [mʌnt], P4 [mʌnθ], P5 [mʌnt], P6 [mʌnt], P7 [mʌnt], P8 [mʌnt] | Dominant: [mʌnt] | Substitution: /θ/ → [t] (Stop Substitution) | Status: Inaccurate (87.5% Inaccuracy)

Voiced Dental Fricative (/ð/)

1. The [Initial] | Target: /ðə/ | Realizations: P1 [də], P2 [də], P3 [də], P4 [ðə], P5 [də], P6 [də], P7 [də], P8 [də] | Dominant: [d] | Substitution: /ð/ → [d] (Voiced Stop Substitution) | Status: Inaccurate (87.5% Inaccuracy)

2. They [Initial] | Target: /ðeɪ/ | Realizations: P1 [deɪ], P2 [deɪ], P3 [deɪ], P4 [deɪ], P5 [deɪ], P6 [ðeɪ], P7 [deɪ], P8 [deɪ] | Dominant: [deɪ] / [deɪ] | Substitution: /ð/ → [d] (Voiced Stop Substitution) | Status: Inaccurate (87.5% Inaccuracy)

3. That [Initial] | Target: /ðæt/ | Realizations: P1 [dæt], P2 [dæt], P3 [dæt], P4 [dæt], P5 [dæt], P6 [dæt], P7 [dæt], P8 [dæt] | Dominant: [dæt] | Substitution: /ð/ → [d] (Voiced Stop Substitution) | Status: Inaccurate (100% Inaccuracy)

4. Then [Initial] | Target: /ðen/ | Realizations: P1 [den], P2 [den], P3 [den], P4 [den], P5 [den], P6 [den], P7 [den], P8 [den] | Dominant: [den] | Substitution: /ð/ → [d] (Voiced Stop Substitution) | Status: Inaccurate (100% Inaccuracy)

5. Mother [Medial] | Target: /'mʌðə/ | Realizations: P1 ['mʌdə], P2 ['mʌdə], P3

['mʌdə], P4 ['mʌðə], P5 ['mʌdə], P6 ['mʌdə], P7 ['mʌdə], P8 ['mʌdə] |

Dominant: [md] / ['mʌdə] | Substitution: /ð/ → [d] (Voiced Stop Substitution) | Status: Inaccurate (87.5% Inaccuracy)

6. Father [Medial] | Target: /'fɑ:ðə/ | Realizations: P1 ['fɑ:də], P2 ['pɑ:də], P3 ['fɑ:də], P4 ['fɑ:ðə], P5 ['pɑ:də], P6 ['fɑ:də], P7 ['fɑ:də], P8 ['fɑ:də] | Dominant: [fd] / ['fɑ:də] | Substitution: /ð/ → [d] (Voiced Stop Substitution) | Status: Inaccurate (87.5% Inaccuracy)

7. Brother [Medial] | Target: /'brʌðə/ | Realizations: P1 ['brʌdə], P2 ['brʌdə], P3 ['brʌdə], P4 ['brʌdə], P5 ['brʌdə], P6 ['brʌðə], P7 ['brʌdə], P8 ['brʌdə] | Dominant: [brd] / ['brʌdə] | Substitution: /ð/ → [d] (Voiced Stop Substitution) | Status: Inaccurate (87.5% Inaccuracy)

8. Weather [Medial] | Target: /'weðə/ | Realizations: P1 ['wedə], P2 ['wedə], P3 ['wedə], P4 ['weðə], P5 ['wedə], P6 ['wedə], P7 ['wedə], P8 ['wedə] | Dominant: [wed] / ['wedə] | Substitution: /ð/ → [d] (Voiced Stop Substitution) | Status: Inaccurate (87.5% Inaccuracy)

9. Breathe [Final] | Target: /bri:ð/ | Realizations: P1 [bri:d], P2 [bri:t], P3 [bri:d], P4 [bri:d], P5 [bri:d], P6 [bri:d], P7 [bri:d], P8 [bri:d] | Dominant: [bri:d] | Substitution: /ð/ → [d] (Voiced Stop Substitution) | Status: Inaccurate (100% Inaccuracy)

10. Smooth [Final] | Target: /smu:ð/ | Realizations: P1 [smu:d], P2 [smu:t], P3 [smu:d], P4 [smu:ð], P5 [smu:d], P6 [smu:d], P7 [smu:d], P8 [smu:d] | Dominant: [smu:d] | Substitution: /ð/ → [d] (Voiced Stop Substitution) | Status: Inaccurate (87.5% Inaccuracy)

11. With [Final] | Target: /wɪð/ | Realizations: P1 [wɪd], P2 [wɪt], P3 [wɪd], P4 [wɪd], P5 [wɪd], P6 [wɪð], P7 [wɪd], P8 [wɪd] | Dominant: [wɪd] / [wɪd] | Substitution: /ð/ → [d] (Voiced Stop Substitution) | Status: Inaccurate (87.5% Inaccuracy)

12. Cloth [Final] | Target: /kləʊð/ | Realizations: P1 [kləʊd], P2 [kləʊt], P3 [kləʊd], P4 [kləʊd], P5 [kləʊd], P6 [kləʊd], P7 [kləʊd], P8 [kləʊd] | Dominant: [kləʊd] / [kləʊd] | Substitution: /ð/ → [d] (Voiced Stop Substitution) | Status: Inaccurate (100% Inaccuracy)

a. Pronunciation Accuracy on Sentence List (10 Sentences)

To verify whether phonological interference persists in natural, continuous speech, participants read ten contextual sentences. The observed speech patterns confirm that when focus shifts to sentence fluency, participants revert even more consistently to L1 phonetic substitutions.

Contextual Sentence Test Result of Dental Fricatives /θ/ and /ð/ (10 Sentence)

1. Sentence 1: "The three boys thought it was their birthday."

Target: /ðə θriː bɔɪz θɔːt ɪt wəz ðə 'bɜːθdeɪ/ | Realization: [də triː bɔɪz tɔːt ɪt wəz deər 'bɜːtdeɪ] Key Phenomenon: Systematic substitution of /ð/ → [d] and /θ/ → [t] across all target words. | Status: Inaccurate

2. Sentence 2: "My mother and father like this weather."

Target: /maɪ 'mʌðər ænd 'fɑːðə laɪk ðɪs 'weðə/ | Realization: [maɪ 'madər æn 'fɑːdər laɪk dɪs 'wedər] Key Phenomenon: Complete shift of all voiced dental fricatives /ð/ to alveolar stop [d]. | Status: Inaccurate

3. Sentence 3: "They go through the bathroom to brush their teeth."

Target: /ðeɪ ɡəʊ θruː ðə 'bɑːθruːm tuː brʌʃ ðeə tiːθ/ | Realization: [deɪ ɡəʊ truː də 'bɑːtruːm tuː brʌʃ deə tiːt] Key Phenomenon: Consistent replacement of /ð/ with [d] (They, the, their) and /θ/ with [t] (through, teeth). | Status: Inaccurate

4. Sentence 4: "There is nothing in my mouth."

Target: /ðeər ɪz 'nʌθɪŋ ɪn maɪ maʊθ/ | Realization: [deɪ ɪz 'nʌtɪŋ ɪn maɪ maʊt]

Key Phenomenon: Total substitution of /ð/ → [d] and /θ/ → [t] in initial, medial, and final positions. | Status: Inaccurate

5. Sentence 5: "That healthy man is my brother."

Target: /ðæt 'helθi mæn ɪz maɪ 'brʌðə/ | Realization: [dæt 'helti mæn ɪs maɪ

'brədər] Key Phenomenon: Interdental fricatives completely replaced by alveolar stops ([d] and [t]). | Status: Inaccurate

6. Sentence 6: "They have thirty books in that room."

Target: /ðeɪ hæv 'θɜːti bʊks ɪn ðæt ruːm/ | Realization: [deɪ hef 'tɜːti bʊks ɪn

dæt ruːm] Key Phenomenon: Persistent occurrence of stop consonants replacing fricatives word-initially. | Status: Inaccurate

7. Sentence 7: "I can breathe smoothly with this mask."

Target: /aɪ kæn briːð 'smuːðli wɪð ðɪs mɑːsk/ | Realization: [aɪ kæn briːd

'smuːdli wɪd ðɪs mɑːsk] Key Phenomenon: Voiced dental fricative /ð/ uniformly realized as [d] across final and medial positions. | Status: Inaccurate

8. Sentence 8: "I think they are coming this month."

Target: /aɪ θɪŋk ðeɪ ɑː 'kʌmɪŋ ðɪs mʌnθ/ | Realization: [aɪ tʰɪŋk deɪ ɑːr

'kamɪŋ dɪs mʌnt] Key Phenomenon: Initial /θ/ produced with aspirated stop [t^h], while /ð/ shifts to [d]. | Status: Inaccurate

9. Sentence 9: "He said anything about their clothes."

Target: /hi: sed 'eniθɪŋ ə'baʊt ðeə kləʊðz/ | Realization: [hi: set 'enɪtɪŋ ə'baʊt der kləʊdz] Key Phenomenon: Comprehensive conversion of fricative target sounds into stop consonants. | Status: Inaccurate

10. Sentence 10: "Then, they walked to the North side."

Target: /ðen ðeɪ wɔ:kt tu: ðə nɔ:θ saɪd/ | Realization: [den der wɔ:kt tu: də nɔ:t saɪd] Key Phenomenon: Systematic accuracy failure across initial and final positions. | Status: Inaccurate

The empirical data indicates a systemic phonological shift from target interdental fricatives to native alveolar stops. When attempting to produce the voiceless target phoneme /θ/, participants consistently defaulted to the voiceless stop [t] or the aspirated variant [t^h] (e.g., target /θri:/ realized as [tri:], and /θɪŋk/ realized as [t^hɪŋk]). Similarly, for the voiced target phoneme /ð/, participants completely obstructed the continuous airflow required for the fricative, substituting it with the voiced alveolar stop [d] (e.g., target /ðæt/ produced as [dæt], and /'mʌðə/ produced as ['mʌdə]). This consistent notation highlights the contrast between standard RP phonemic targets /θ, ð/ and actual L1-influenced phonetic realizations [t, t^h, d].

1. Phonetic Substitutions of English Dental Fricatives

The phonetic analysis reveals that native Acehese EFL learners systematically substitute English dental fricatives /θ/ and /ð/ with native Acehese stop consonants. None of the participants consistently produced the target interdental fricatives.

Substitution of Voiceless Dental Fricative /θ/: The target voiceless interdental sound /θ/ was predominantly substituted by the voiceless alveolar stop [t] or the aspirated voiceless stop [tʰ]. For instance, the word *think* /θɪŋk/ was realized as [tɪŋk] or [tʰɪŋk], and *three* /θri:/ was realized as [tri:].

Substitution of Voiced Dental Fricative /ð/: The target voiced interdental sound /ð/ was universally substituted by the voiced alveolar stop [d]. For example, the word *that* /ðæt/ was pronounced as [dæt], and *mother* /'mʌðər/ was pronounced as ['mʌdər].

2. Underlying Causes of Pronunciation Difficulties

The qualitative analysis identifies three primary underlying causes for the learners' pronunciation errors:

Phonological Gap in L1 Inventory: Acehese lacks interdental fricative phonemes /θ/ and /ð/. According to phonological transfer theory, when learners encounter target language sounds absent in their native language, they

automatically map them onto the nearest acoustic equivalents in their native phonological system.

Articulatory Muscle Memory: The physical production of /θ/ and /ð/ requires placing the tongue tip between the upper and lower teeth. Acehnese speakers possess muscle memory trained exclusively for alveolar stops [t], [d] and aspirated stops [t^h]. Consequently, their articulators instinctively default to striking the alveolar ridge rather than maintaining continuous interdental friction.

Negative Cross-Linguistic Transfer: Learners perceive English orthographic *th* as a single unit and substitute it with native Acehnese phonetic patterns, resulting in negative L1 interference during oral speech production.

The persistent inaccuracy among Acehnese EFL learners can be attributed to three main phonetic and cognitive factors:

Physical Muscle Memory and Place of Articulation: English interdental fricatives require the tip of the tongue to be placed between the upper and lower teeth or directly against the inside of the upper incisors. In contrast, native Acehnese consonants do not utilize any interdental articulatory gestures. Acehnese speakers are physically habituated to striking the alveolar ridge directly behind the upper front teeth. When encountering /θ/ and /ð/, the learners' active articulator (the tongue) instinctively retracts to the familiar alveolar position, converting interdental sounds into alveolar stops.

Manner of Articulation Breakdown (Fricative vs. Stop): Fricatives require a narrow constriction that permits continuous airflow while generating acoustic friction. Stops require complete closure of the vocal tract followed by a sudden release. Acehnese learners fail to sustain continuous airflow; instead, they completely block the breath stream against the teeth or alveolar ridge, changing the manner of articulation from a continuant fricative to a plosive stop.

Cognitive 'Phonological Deafness' and Interference from L1 Aspirated Stops: As predicted by Lado's Contrastive Analysis Hypothesis (1957) and Weinreich's theory of language interference, when an L2 category is absent, the brain maps foreign acoustic inputs onto the nearest existing L1 categories. Acehnese possesses native aspirated stops such as /t^h/ (found in native words like thèë 'to know'). Because native learners perceive the strong air release in English /θ/ as acoustically similar to their native aspirated stop [t^h], they mistakenly map /θ/ onto their native stop system. However, while Acehnese [t^h] involves a complete blockage of air followed by a burst, English /θ/ requires uninterrupted friction. This mismapping acts as a cognitive filter that causes systemic phonological interference.

Table 4.1:*Comparison of Phonological Errors with Findings from Previous Studies*

Comparative Parameter	Present Study (2026)	Amiruddin (2019)
Focus of Investigation	Pronunciation accuracy of English dental fricatives (/θ/ and /ð/)	Broad oral performance errors (grammar, vocabulary, and pronunciation)
Participant Profile	8 native Acehnese EFL learners in Gampong Iboih, Sabang	20 third-year English Education Department students at UIN Ar-Raniry
Dominant Error Category	Consonant substitution (/θ/ → [t]/[tʰ]; /ð/ → [d])	Puzzling vowel insertion (62.7% of total errors)
Primary Source of Error	L1 Phonological Interference (Absence of interdental phonemes in Acehnese)	Interlanguage factor & Interlingual transfer
Specific Phonetic Finding	Interdental fricatives shifted to alveolar stops ([t], [tʰ], [d])	Vowels mispronounced/inserted due to L1 spelling-sound mapping

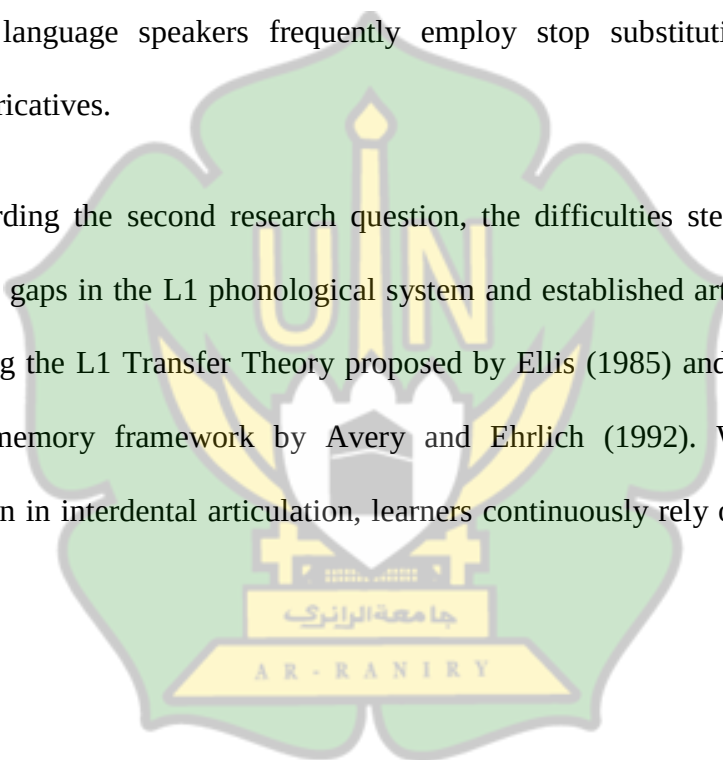
Source: Primary Data and Adapted from Amiruddin (2019) & Aziz et al. (2020).

As shown in Table 4.5, while Amiruddin (2019) identified pronunciation errors as the single largest contributor to oral performance difficulties (62.7%), his findings were predominantly driven by vowel distortions and insertion among university-level English majors. In contrast, the present study reveals that non-university EFL learners in Gampong Iboih face a structural consonant barrier: a total inability to produce dental fricatives due to native phonological constraints. Both studies confirm that L1 transfer remains the primary obstacle to accurate spoken English among Acehnese learners.

B. Discussion

The findings of this study demonstrate a clear pattern of negative L1 interference among Acehnese EFL learners in Gampong Iboih, Sabang. In response to the first research question, the results show that learners consistently replace /θ/ with [t]/[t^h] and /ð/ with [d]. These results align with previous research by Al-Arief (2018) and Pillai and Yusuf (2012), who reported that Indonesian regional language speakers frequently employ stop substitution for missing English fricatives.

Regarding the second research question, the difficulties stem directly from structural gaps in the L1 phonological system and established articulatory habits, supporting the L1 Transfer Theory proposed by Ellis (1985) and the articulatory muscle memory framework by Avery and Ehrlich (1992). Without explicit instruction in interdental articulation, learners continuously rely on native speech habits.



CHAPTER V

CONCLUSION AND RECOMMENDATION

This final chapter presents the overall conclusions synthesized from the research findings and discussion detailed in Chapter IV. Additionally, it outlines practical and theoretical recommendations for EFL educators, Acehese EFL learners, curriculum designers, and future researchers in the field of Second Language Acquisition (SLA) and English phonology.

A. Conclusion

This study investigated the impact of first language (L1) interference on the pronunciation accuracy of English dental fricatives /θ/ and /ð/ among native Acehese EFL learners residing in Gampong Iboih, Sabang. Based on the qualitative and quantitative data analysis, two main conclusions are drawn corresponding directly to the research questions:

1. Systematic Phonetic Substitution Patterns

The findings demonstrate that native Acehese EFL learners exhibit severe pronunciation inaccuracies when producing English dental fricatives, yielding an overall accuracy rate of only 7.3% in isolated word readings and dropping further to 3.8% in contextual sentence readings. Due to the complete absence of interdental fricatives in the native Acehese phonological system, learners systematically substitute target fricatives with native Acehese stop consonants:

Voiceless Dental Fricative /θ/: Learner production reveals consistent substitution with either the voiceless alveolar stop [t] or the aspirated voiceless stop [t^h] across initial, medial, and final word positions (e.g., *think* /θɪŋk/ → [tɪŋk]/[t^hɪŋk]; *three* /θri:/ → [tri:]; *method* /'meθəd/ → ['metət]; *tooth* /tu:θ/ → [tu:t].

Voiced Dental Fricative /ð/: Learner production demonstrates universal substitution with the voiced alveolar stop [d] across all phonetic environments (e.g., *that* /ðæt/ → [dæt]; *mother* /'mʌðər/ → ['mʌdər]; *smooth* /smu:ð/ → [smu:d]).

2. Underlying Linguistic and Articulatory Mechanisms

The systematic error patterns identified in this research stem from three primary underlying causes:

L1 Phonological Inventory Gap: Acehnese lacks interdental fricative phonemes. In accordance with L1 Transfer Theory, learners default to mapping unfamiliar target phonemes onto acoustic equivalents present in their native L1 inventory.

Perceptual Filtering and Articulatory Muscle Memory: Established native articulatory habits filter target acoustic inputs. Rather than extending the tongue tip between the teeth to create continuous friction, learners instinctively strike the alveolar ridge due to deeply entrenched motor habits for native stops.

Orthographic Transfer: English orthographic *th* is misperceived as a familiar stop sound rather than an interdental fricative, compounding cross-linguistic negative transfer during oral reading tasks.

B. Recommendations

Based on the conclusions derived from this study, the following recommendations are offered for various stakeholders in English language teaching and research:

1. For EFL Educators and Lecturers

Explicit Phonetic Instruction: Teachers should move beyond general repetition exercises and provide explicit, physical instruction on interdental articulation—demonstrating exact tongue-and-teeth positioning required for /θ/ and /ð/.

Contrastive Phonological Awareness: Instructors should incorporate contrastive analysis in classroom lessons to help Acehnese learners consciously distinguish between English interdental fricatives (/θ/, /ð/) and Acehnese alveolar stops ([t], [d], [tʰ]).

Use of Visual and Tactile Feedback: Utilizing mirrors, mouth diagrams, and physical cues during drills can help learners build new articulatory muscle memory and break reliance on L1 motor patterns.

2. For Acehnese EFL Learners

Self-Monitoring and Auditory Discrimination: Learners should actively practice auditory discrimination exercises to train their perceptual filter to recognize the subtle acoustic differences between dental fricatives and alveolar stops.

Targeted Muscle Memory Practice: Learners are encouraged to conduct conscious articulation drills focusing on placing the tongue tip slightly between the upper and lower teeth until interdental friction becomes natural.

3. For Future Researchers

Expanded Sample Size and Dialectal Diversity: Future studies should include a broader sample size across different dialects of the Acehnese language to verify whether phonetic substitution patterns vary geographically.

Longitudinal Experimental Studies: Researchers are encouraged to conduct experimental intervention studies testing the long-term effectiveness of explicit articulatory training on improving L2 dental fricative accuracy.

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APPENDICES



Appendix 1: Research Instruments

Part A: Word List Task (24 Target Words)

Below is the list of 24 English target words containing voiceless (/θ/) and voiced (/ð/) dental fricatives across initial, medial, and final positions.

1. Initial Position

Voiceless Dental Fricative (/θ/):

Think /θɪŋk/
 Three /θriː/
 Thirty /'θɜːti/
 Through /θruː/

Voiced Dental Fricative (/ð/):

The /ðə/
 They /ðeɪ/
 That /ðæt/
 Then /ðen/

2. Medial Position

Voiceless Dental Fricative (/θ/):

Birthday /'bɜːθdeɪ/
 Healthy /'helθi/
 Anything /'eniθɪŋ/
 Nothing /'nʌθɪŋ/

Voiced Dental Fricative (/ð/):

Mother /'mʌðə/
 Father /'fɑːðə/
 Brother /'brʌðə/
 Weather /'weðə/

3. Final Position

Voiceless Dental Fricative (/θ/):

Bath /bɑːθ/
 Teeth /tiːθ/
 Mouth /maʊθ/
 Month /mʌnθ/

Voiced Dental Fricative (/ð/):

Breathe /bri:ð/

Smooth /smu:ð/

With /wɪð/

Clothe /kləʊð/

Part B: Contextual Sentence Reading Task (10 Sentences)

Participants were instructed to read aloud the following ten sentences containing the target phonemes:

1. The three boys thought it was their birthday. /ðə θri: bɔɪz θɔ:t it wəz ðeə 'bɜ:θdeɪ/
2. My mother and father like this weather. /maɪ 'mʌðər ænd 'fɑ:ðə laɪk ðɪs 'weðə/
3. They go through the bathroom to brush their teeth. /ðeɪ ɡəʊ θru: ðə 'bɑ:θru:m tu: brʌʃ ðeə ti:θ/
4. There is nothing in my mouth. /ðeər ɪz 'nʌθɪŋ ɪn maɪ maʊθ/
5. That healthy man is my brother. /ðæt 'helθi mæn ɪz maɪ 'brʌðə/
6. They have thirty books in that room. /ðeɪ hæv 'θɜ:ti bʊks ɪn ðæt ru:m/
7. I can breathe smoothly with this mask. /aɪ kæn bri:ð 'smu:ðli wɪð ðɪs mɑ:sk/
8. I think they are coming this month. /aɪ θɪŋk ðeɪ ɑ: 'kʌmɪŋ ðɪs mʌnθ/
9. He said anything about their clothes. /hi sed 'eniθɪŋ ə 'baʊt ðeə kləʊðz/
10. Then, they walked to the North side. /ðen ðeɪ wɔ:kt tu: ðə nɔ:θ saɪd/

Appendix 2: Participants' Demographic Profile

Detailed demographic profiles of the 8 adult native Acehnese speakers recruited from Gampong Iboih, Sabang:

Participant 1 (P1)

Gender: Female | Age: 20 years old Native Language (L1): Acehnese | Origin/Residence: Gampong Iboih, Sabang Educational Background: EFL Undergraduate Student

Participant 2 (P2)

Gender: Male | Age: 21 years old Native Language (L1): Acehnese | Origin/Residence: Gampong Iboih, Sabang Educational Background: EFL Undergraduate Student

Participant 3 (P3)

Gender: Female | Age: 20 years old Native Language (L1): Acehnese | Origin/Residence: Gampong Iboih, Sabang Educational Background: EFL Undergraduate Student

Participant 4 (P4)

Gender: Male | Age: 22 years old Native Language (L1): Acehnese | Origin/Residence: Gampong Iboih, Sabang Educational Background: EFL Undergraduate Student

Participant 5 (P5)

Gender: Female | Age: 21 years old Native Language (L1): Acehnese | Origin/Residence: Gampong Iboih, Sabang Educational Background: EFL Undergraduate Student

Participant 6 (P6)

Gender: Female | Age: 20 years old Native Language (L1): Acehnese | Origin/Residence: Gampong Iboih, Sabang Educational Background: EFL Undergraduate Student

Participant 7 (P7)

Gender: Male | Age: 21 years old Native Language (L1): Acehnese | Origin/Residence: Gampong Iboih, Sabang Educational Background: EFL Undergraduate Student

Participant 8 (P8)

Gender: Female | Age: 22 years old Native Language (L1): Acehnese | Origin/Residence: Gampong Iboih, Sabang Educational Background: EFL Undergraduate Student

Appendix 3: Decree Letter



KEPUTUSAN DEKAN FAKULTAS TARBIYAH DAN KEGURUAN UIN AR-RANIRY BANDA ACEH
NOMOR : 1349 TAHUN 2025

TENTANG:
PENGANGKATAN PEMBIMBING SKRIPSI MAHASISWA

DENGAN RAHMAT TUHAN YANG MAHA ESA

DEKAN FAKULTAS TARBIYAH DAN KEGURUAN UIN AR-RANIRY BANDA ACEH

Menimbang	a. bahwa untuk kelancaran bimbingan skripsi mahasiswa pada Fakultas Tarbiyah dan Keguruan UIN Ar-Raniry Banda Aceh maka dipandang perlu menunjuk Pembimbing skripsi; b. bahwa yang namanya tersebut dalam Surat Keputusan ini dianggap cakap dan mampu untuk diangkat dalam jabatan sebagai Pembimbing skripsi Mahasiswa; c. bahwa berdasarkan pertimbangan sebagaimana dimaksud dalam huruf a dan huruf b, perlu menetapkan Keputusan Dekan Fakultas Tarbiyah dan Keguruan UIN Ar-Raniry Banda Aceh.
Mengingat	1. Undang-Undang Nomor 20 Tahun 2003, tentang Sistem Pendidikan Nasional; 2. Undang-Undang Nomor 14 Tahun 2005, tentang Guru dan Dosen; 3. Undang-Undang Nomor 12 Tahun 2012, tentang Pendidikan Tinggi; 4. Peraturan Presiden Nomor 74 Tahun 2012, tentang perubahan atas peraturan pemerintah RI Nomor 23 Tahun 2005 tentang pengelolaan keuangan Badan Layanan Umum; 5. Peraturan Pemerintah Nomor 4 Tahun 2014, tentang penyelenggaraan Pendidikan Tinggi dan Pengelolaan Perguruan Tinggi; 6. Peraturan Presiden Nomor 64 Tahun 2013, tentang perubahan Institut Agama Islam negeri Ar-Raniry Banda Aceh Menjadi Universitas Islam Negeri Ar-Raniry Banda Aceh; 7. Peraturan Menteri Agama RI Nomor 44 Tahun 2022, tentang Organisasi & Tata Kerja UIN Ar-Raniry Banda Aceh; 8. Peraturan Menteri Agama Nomor 14 Tahun 2022, tentang Statuta UIN Ar-Raniry Banda Aceh; 9. Keputusan Menteri Agama Nomor 402 Tahun 2003, tentang Pendelegasian Wewenang Pengangkatan, Pemindahan dan Pemberhentian PNS di Lingkungan Depag RI; 10. Keputusan Menteri Keuangan Nomor 205/KMk.05/2011, tentang penetapan institusi agama Islam Negeri UIN Ar-Raniry Banda Aceh pada Kementerian Agama sebagai Instansi Pemerintah yang menerapkan Pengelolaan Badan Layanan Umum; 11. Surat Keputusan Rektor UIN Ar-Raniry Nomor 01 Tahun 2015, Tentang Pendelegasian Wewenang kepada Dekan dan Direktur Pendidikan di Lingkungan UIN Ar-Raniry Banda Aceh.
MEMUTUSKAN	
Menetapkan	Keputusan Dekan Fakultas Tarbiyah dan Keguruan UIN Ar-Raniry Banda Aceh tentang Pembimbing Skripsi Mahasiswa
KESATU	Mencabut Keputusan Dekan FTK UIN Ar-Raniry No. 717/ TAHUN 2025
KEDUA	Menunjuk Saadara Drs. Amiruddin, M.Pd Untuk membimbing Skripsi Nama : Putri Cut Thawathina NIM : 260203025 Program Studi : Pendidikan Bahasa Inggris Judul Skripsi : The Impact of First Language Interference on English Pronunciation Accuracy among Acehnese EFL Learners
KETIGA	Kepada pembimbing yang tercantum namanya diatas diberikan honorarium sesuai dengan peraturan perundang-undangan yang berlaku
KEEMPAT	Pembiayaan akibat keputusan ini dibebankan pada DIPA UIN Ar-Raniry Banda Aceh Nomor BP DIPA-026.04.2.423925/2024 Tanggal 24 November 2024 Tahun Anggaran 2025;
KELIMA	Surat Keputusan ini berlaku selama enam bulan sejak ditetapkan;
KEENAM	Surat Keputusan ini berlaku sejak tanggal ditetapkan dengan ketentuan bahwa segala sesuatu akan diubah dan diperbaiki kembali sebagaimana mestinya, apabila kemudian hari ternyata terdapat kekeliruan dalam Surat Keputusan ini.

Ditetapkan di : Banda Aceh
 Pada tanggal : 08 Oktober 2025
 Dekan

 **Saifur Muluk**

Tembusan

1. Salinan Kementerian Agama RI di Jakarta;
2. Salinan Keputusan UIN Kementerian Agama RI di Jakarta;
3. Dekan Perguruan Tinggi Keagamaan Islam Kementerian Agama RI di Jakarta;
4. Kantor Pelayanan Pendaftaran Wilayah (KPPW) di Banda Aceh;
5. Rektor UIN Ar-Raniry di Banda Aceh;
6. Kepala Badan Keuangan dan Akuntansi UIN Ar-Raniry Banda Aceh;
7. Yang bersangkutan;
8. Arsip.




Appendix 4: Research Permit Letter



**KEMENTERIAN AGAMA REPUBLIK INDONESIA
UNIVERSITAS ISLAM NEGERI AR-RANIRY BANDA ACEH
FAKULTAS TARBIYAH DAN KEGURUAN**

Jl. Syekh Abdur Rauf Kopelma Darussalam Banda Aceh Telp/Fax. : 0651-752921

Nomor : B-5312/Un.08/FTK.1/TL.00/7/2026

Lamp : -

Hal : *Penelitian Ilmiah Mahasiswa*

Kepada Yth,

Keichik Gampong Iboih Kecamatan Sukamakmue Kota Sabang

Assalamualaikum Warahmatullahi Wabarakatuh.

Fakultas Tarbiyah Dan Keguruan UIN Ar-Raniry dengan ini menerangkan bahwa:

NIM : 200203055

Nama : PUTRI CUT THUERSHINA

Program Studi/Jurusan : Pendidikan Bahasa Inggris

Alamat : JLN KM NOL GAMPONG IBOIH

Saudara yang tersebut namanya diatas benar mahasiswa Fakultas Tarbiyah Dan Keguruan bermaksud melakukan penelitian ilmiah di lembaga yang Bapak/Ibu pimpin dalam rangka penulisan Skripsi dengan judul ***THE IMPACT OF FIRST LANGUAGE INTERFERENCE ON ENGLISH PRONUNCIATION ACCURACY AMONG ACEHNESE EFL LEARNERS***

Banda Aceh, 31 Juli 2026

An. Dekan

Wakil Dekan Bidang Akademik dan Kelembagaan



Berlaku sampai : 04 September 2026

جامعة الرانيري

Prof. Dr. Buhori Muslim, M.Ag.

NIP. 197508152001121002

AR-RANIRY

Appendix 5: Documentations